



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/701,420	01/27/2000	Katsunori Kumasaka	0694-127	9104

7590

04/07/2004

BRADLEY RUBEN
463 FIRST ST. SUITE 5A
HOBOKEN, NJ 07030

EXAMINER

BUDD, MARK OSBORNE

ART UNIT	PAPER NUMBER
----------	--------------

2834

DATE MAILED: 04/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/701,420

Applicant(s)

KUMASAKA ET AL.

Examiner

Mark Budd

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 4-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claims 4-6 are rejected under 35 USC 103 as unpatentable over the Prior Art (applicant's fig. 1 or Japan (250)). Each reference (note fig. 5 of JP(250)) teaches the piezoelectric transformer structure with at least two pairs of output electrodes on the side surfaces (e.g. #27, 29, #31, 32, #35, 37 fig. 1 #14a, #14b, #of JP 250) the second electrodes kept at a same potential (e.g. #14a, #14b of JP250 and #43 and #47 of Prior Art fig. 1). They don't explicitly teach the transformer to be mounted on a PCB that also contains a power supply circuit. However, applicants description of the prior art (e.g. specification pg. 1-3 and Japan (033) teaches the transformer is routinely mounted onto a printed circuit board and is also routinely used with a power supply circuit. Placing both on a common PCB to save space and allow integrated circuit construction methods would have been obvious to one of ordinary skill in the art.

Claims 10, 11 are rejected under 35 USC 103 as unpatentable over Inoi. (Figs. 8 and 12) teaches the piezoelectric transformer with elastic support bodies (#7, #4), which "are located within each of areas occupying one fifth of the full length of said transformer from both ends thereof". The transformer is 42mm long (see col. 8, line 42), therefore nodes #21, #23 at one quarter the length are located at 10.5mm from each end. Mounting member #4 is 9.5mm wide (col. 9, line 31) and lies between the nodes and the ends. Since one fifth of 42mm is approximately 8mm, the supports \$3 must occupy this designated area. In fig. 12, supports #7 cover all of both ends and therefore also occupy the claimed mounting locations. Inoi does not explicitly show the transformer mounted directed onto a PCB with the appropriate input/output circuitry. However, as noted above such arrangements are conventional (note e.g. applicants

description of the Prior Art and Japan (033) to thus dispose Inoi's transformer directly on a PCB, or incorporate a PCB with circuitry into Inoi's housing (e.g. to save space) would have been obvious to one of ordinary skill in the art.

Claims 7-9 and 12-17 are rejected under 35 USC 103 as unpatentable over Inoi in view of Japan (250) or the Prior Art (applicant's fig. 1) or vice versa. Inoi teaches a piezoelectric transformer supported by elastic members within one fifth of the length from each end. Inoi does not teach multiple output electrode pairs on side surfaces. However, each of the Prior Art and Japan (250), as noted above, teach this specific transformer to be well known per se. The routineer would not limit (Inoi's mounting advantages to the specific transformer illustrated, but would realize that any similar transformer could be place in Onoi's mount. (selection from among know, equivalent piezo transformers. Thus to mount either the specific Prior Art (applicants fig. 1) or Japan (250) transformer within Ono's mounting would have been obvious to one of ordinary skill in the art. Conversely, to select form among known piezoelectric transformer mountings for the Prior Art and Japan (250) and use the mount of Inoi (e.g. due to its superior protection via elastic mounts) would have been obvious to one of ordinary skill in the art. Note, in the last office action the examiner inadvertently grouped claims as it dependent from claim 4 rather than claim 14. The examiner apologizes for this over sight.

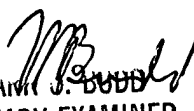
The newly stated rejections are necessary in view of applicant's amendments to claims 4, 5 and 12.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Budd/ds

03/24/04


MARK J. BUDD
PRIMARY EXAMINER
ART UNIT 2834